



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
**OFFICE OF RADIATION AND INDOOR AIR**  
National Air and Radiation Environmental Laboratory  
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April 12, 2012

**MEMORANDUM**

**SUBJECT:** Radiochemical Results for  
Dimock Residential Groundwater Site Samples

**FROM:** Cindy White, Acting Director *Cindy White*  
Center for Environmental Radioanalytical Laboratory Science

**TO:** Fred Foreman, Chief  
Technical Services, Region 3

Attached are data packages for gamma, gross alpha and beta, isotopic uranium, and radium-228 analysis of samples collected from the Dimock Residential Groundwater Site in Dimock, PA. The samples constitute NAREL batch number 1200002. Also attached are radium-228 data packages for NAREL batch numbers 1100244, 1100245, 1100246, and 1100248. A data package for isotopic uranium analysis of batch number 1100243 is also attached. The results of further analyses will be sent as they are completed.

Radiochemical analyses usually require the subtraction of an instrument background measurement from a gross sample measurement. Both values are positive, but when the sample activity is low, random variations in the two measurements can cause the gross value to be less than the background, resulting in a measured activity less than zero. Although negative activities have no physical significance, they do have statistical significance, as for example in the evaluation of trends or the comparison of two groups of samples.

For all analyses, it is the policy of NAREL to report results as generated, whether positive, negative, or zero, together with the 2-sigma measurement uncertainty and a sample-specific estimate of the minimum detectable concentration (MDC). The activity, uncertainty, and MDC are given in the same units.

Specific information concerning all aspects of the radiological analysis of the samples is contained in the batch case narratives of the data packages. If you have any questions concerning the analytical results, please contact me at (334)270-7052.

Attachments

cc: John G. Griggs, NAREL

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